

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte ANDREW D. BICEK and
TIMOTHY S. GIRTON

Appeal 2007-2563
Application 10/058,640
Technology Center 3700

Decided: July 19, 2007

Before DONALD E. ADAMS, LORA M. GREEN, and RICHARD M.
LEBOVITZ, *Administrative Patent Judges*.

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DECISION ON APPEAL

This is a decision on appeal from the final rejection of 1, 2, 4, 5, 8-11, 13, 14, and 17. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF CASE

The claims are directed to stents having a serpentine pattern. Claims 1-4, 5, 7-14, 16, and 17-22 are pending (Br. 2). Claims 3, 7, 12, and 16 are withdrawn from consideration (Br. 2). The Examiner withdrew the rejection of claims 18-22 in the Answer (Answer 3). Claims 1, 2, 4, 5, 8-11, 13, 14,

and 17 are rejected over prior art. The Examiner relies on the following evidence of unpatentability:

Dang	US 5,935,162	Aug. 10, 1999
Dinh	US 6,019,789	Feb. 1, 2000

The following rejections are on appeal:

Claims 1, 2, 4, 5, 10, 11, 13, and 14 stand rejected under 35 U.S.C. § 102(b) as anticipated by Dang (Answer 3).

Claims 8, 9, and 17 stand rejected under 35 U.S.C. § 103(a) as obvious over Dang in view of Dinh (Answer 7).

We select claims 1, 8, and 10 as representative:

1. A stent having a proximal end and a distal end, the stent comprising:

a plurality of axially spaced serpentine bands, each serpentine band having a proximal and distal end and consisting of a plurality of interconnected struts, the struts of substantially the same length, serpentine bands which are adjacent one another connected one to the other; and

a plurality of wishbone connections, each wishbone connector connecting two serpentine bands which are adjacent one another and having an elongate portion which is disposed between the two serpentine bands and does not overlap longitudinally with either of the two serpentine bands, the elongate portion having a proximal end and a distal end, the proximal end having two legs extending therefrom to one of the two serpentine bands and the distal end having two legs extending therefrom to the other of the two serpentine bands, the two legs extending from the proximal end of the elongate portion of each wishbone connector being circumferentially and longitudinally displaced from the two legs extending from the distal end of the elongate portion of the wishbone connector,

at least one wishbone connector connecting serpentine bands which are adjacent one another.

8. The stent of claim 1 wherein each serpentine band comprises alternating peaks and troughs, the number of peaks in the stent being twice the number of wishbone connectors.

10. A stent having a first proximal end and a distal end, the stent comprising:

a plurality of axially spaced serpentine bands, each serpentine band having a proximal end and a distal end, each serpentine band having a plurality of peaks and troughs, all of the peaks longitudinally aligned with one another, all of the troughs longitudinally aligned with one another, serpentine bands which are adjacent one another connected one to the other; and

a plurality of wishbone connectors, each wishbone connector connecting two serpentine bands which are adjacent one another and having an elongate portion which is disposed between the two serpentine bands and does not overlap longitudinally with either of the two serpentine bands, the elongate portion having a proximal end and a distal end, the proximal end having two legs extending therefrom to one of the two serpentine bands and the distal end having two legs extending therefrom to the other of the two serpentine bands, the two legs extending from the proximal end of the elongate portion of each wishbone connector being circumferentially and longitudinally displaced from the two legs extending from the distal end of the elongate portion of the wishbone connector,

at least one wishbone connector connecting serpentine bands which are adjacent one another.

ISSUES ON APPEAL

There are two issues in dispute between the Examiner and Appellants.

First, Appellants contend that Dang's stent does not anticipate claims 1 and 10 because it "fails to include wishbone connectors that have elongate portions, which do not overlap longitudinally with either of the two serpentine bands" as recited in claims 1 and 10 (Br. 8; *see also* Br. 12). The

Examiner contends that “[t]he term overlap is considered to mean, ‘to cover a part of.’ There are no components disclosed by Dang that are covered by another part” (Answer 8). The first issue in this appeal is whether the Examiner erred in determining that Dang describes a stent having serpentine bands which do not overlap with the legs of the wishbone connector as recited in claims 1 and 10.

Secondly, Appellants contend that the bands described by Dang “consist of not only struts of substantially the same length but also [of] the extraneous features of the ‘legs’ of each wishbone connector [described as the “tie member” in Dang]” which are excluded from the serpentine bands of claim 1 by the limitation “consisting of a plurality of struts” (Br. 7). The Examiner contends that Appellants are “giving to[o] much weight to the word[s] “consisting of” in claim 1, and the phrase does not “limit the serpentine bands to be made solely of struts” (Answer 8). The second issue in this appeal is whether the recitation in claim 1 that the serpentine bands are “consisting of . . . interconnected struts” excludes the tie members of Dang.

Both these issues turn on claim interpretation. Consequently, we begin our analysis with the interpretation of claims 1 and 10.

CLAIM INTERPRETATION

Claims 1 and 10 are directed to stents which comprise “a plurality of axially spaced serpentine bands” and “a plurality of wishbone connectors.” The wishbone connectors connect two adjacent serpentine bands together.

The serpentine bands in claim 1, but not in claim 10, are “consisting of a plurality of interconnected struts.” The phrase “consisting of” is a “term[] of art in patent law that ‘define[s] the scope of the claim with respect to what unrecited additional components or steps, if any, are excluded from the scope of the claim.’ MPEP §2111.03; accord *Vehicular Techs. Corp.*, 212 F.3d at 1382-83. The phrase ‘consisting of’ signifies restriction and exclusion of unrecited steps or components. MPEP §2111.03.” *Conoco Inc. v. Energy & Envtl. Int’l LC*, 460 F.3d 1349, 1360, 79 USPQ2d 1801, 1808-09 (Fed. Cir. 2006).

A “strut” is a structural member that is used to resist longitudinal compression.¹ By reciting that the serpentine bands are “consisting of . . . interconnected struts,” we interpret the claim to exclude any structural member from the serpentine band other than the strut.

Claims 1 and 10 also recite that each “wishbone connector,” which connects adjacent serpentine bands, has an “elongate portion . . . disposed between the two serpentine bands” which “does not overlap longitudinally with either of the two serpentine bands.” The elongate portion has two distal and two proximal legs, each which connect, respectively, to an adjacent serpentine band. The term “overlap” means “extend over and cover a part of” and “to coincide in part with; having in common with.”² In other words, when one structural member “covers” another, they have a part in common. We interpret the phrase “does not overlap longitudinally” to mean that the

¹ *The Random House College Dictionary* 1304 (Revised Edition 1982).

² *Id.* at 948.

wishbone connector legs do not extend into or have a part in common with the serpentine bands.

FINDINGS OF FACT

Dang

1. Dang discloses a stent having cylindrical sections which comprise a plurality of “W-shaped elements . . . [which] alternate between pairs of W-shaped elements that open towards each other . . . and pairs . . . that open away from each other” (Dang, col. 2, ll. 50-62, and Figs. 2 and 7).
2. The W-shaped elements are formed from a plurality of struts having substantially the same length (Dang, Figs. 2 and 7; Answer 3).
3. Tie members (50) connect the “center sections of the pairs of W-shaped elements that open towards each other” (Dang, col. 2, ll. 62-67 and Figs. 2 and 7; Answer 3-4).
4. Fig. 2 of Dang shows the W-shaped elements (30) connected to the tie members (Dang, col. 4, l. 54 to col. 5, l. 12).
5. Fig. 3 of Dang is reproduced as follows:

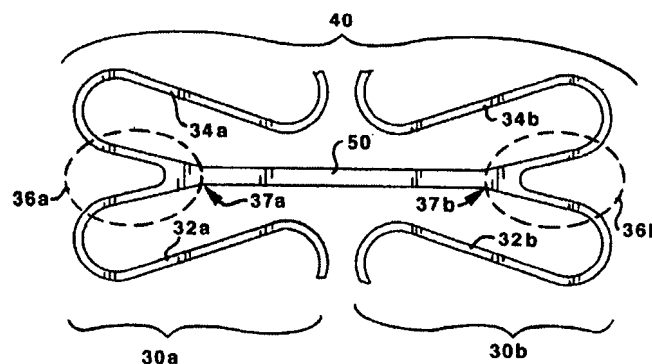


FIG.3

Fig. 3 shows a tie member (50) connected at the peak or apex of the W-shaped element (Dang, col. 5, ll. 20-28).

6. The Examiner finds that Dang's W-shaped elements (Dang, col. 2, ll. 50-62, and Figs. 2 and 7) satisfy the limitation in claims 1 and 10 of "serpentine bands" (Answer 3) and of "serpentine bands . . . consisting of a plurality of interconnected struts . . . of substantially the same length" as recited in claim 1 (Answer 3).

7. The Examiner finds that "tie members" disclosed in Dang (Dang, col. 2, ll. 62-67 and Figs. 2 and 7) meet the limitation of claims 1 and 10 of a "plurality of wishbone connectors, each . . . having an elongate portion that does not overlap" with the serpentine bands (Answer 3-4).

Dinh

8. "With reference to Figures 5[B] and 6[B], Dinh teaches a stent 160 having plurality of serpentine bands 162 connected by a plurality of wishbone connectors 166, the serpentine bands 162 comprising alternating peaks and troughs, the number of peaks in the stent being twice the number of wishbone connectors 166" (Answer 7; Dinh, col. 7, ll. 13-20).

9. "Dinh also teaches that the width of the serpentine bands 162 is greater than that of the wishbone connectors 166 to create a stent having selectively variable radial rigidity and longitudinal flexibility" (Answer 7; Dinh, col. 7, ll. 13-61).

10. The Examiner concludes "in view of the teachings it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the stent disclosed by Dang to incorporate the features

taught by Dinh to produce a stent that provides variable rigidity and longitudinal flexibility” (Answer 7).

DISCUSSION

Anticipation by Dang

Claims 1, 2, 4, 5, 10, 11, 13, and 14 stand rejected under 35 U.S.C. § 102(b) as anticipated by Dang (Answer 3).

Claim 1 is drawn to a stent having “serpentine bands” and “wishbone connectors, each . . . having an elongate portion which . . . does not overlap longitudinally with . . . the two serpentine bands” and which has “two legs” at the proximal and distal ends of the elongate portion. The Examiner finds that both elements are described in Dang’s stent (Answer 3-4; Findings of Fact 6, 7). Fig. 2 from Dang is reproduced below.

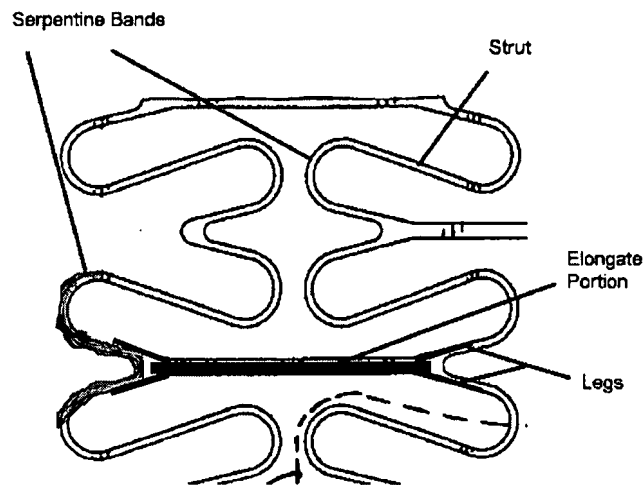


Fig. 2 of Dang has been marked-up to show the correspondence between the structural elements of Dang’s stent and the stent of claim 1.

We agree with Examiner’s findings that Dang’s W-shaped elements satisfy the limitation recited in claims 1 and 5 of “serpentine bands”

(Answer 3; Findings of Fact 6). However, we do not agree with the Examiner (Answer 3-4; Findings of Fact 7) that the tie member described in Dang meets the limitations of the wishbone connector as recited in appealed claims 1 and 10.

Dang's tie member (labeled as "elongate portion") is shown in Fig. 2 (above) as connecting to the "apex" and inward facing loop of the W-shaped or serpentine element (Dang, col. 2, ll. 62-67, col. 5, ll. 20-28, and Figs. 2 and 7; Findings of Fact 3, 5). For the tie member to meet the limitation in claims 1 and 10 of a "wishbone connector . . . having two legs extending therefrom to . . . the serpentine bands," it is necessary to find that a portion of the loop serves as the leg of the wishbone connector. This is shown in our marked-up copy of Fig. 2 (above) where the tie member with legs ("wishbone connector") is filled in with black and the W-shaped element ("serpentine band") is filled in with grey. We have interpreted the phrase "does not overlap longitudinally" to mean that the wishbone connector legs do not extend into or have a part in common with the serpentine bands. As the figure shows, in order for the tie member to be described as having "legs," the legs must be formed from the loop of the W-shaped element. That is, the legs coincide with the W-shaped element that comprises the stent's serpentine band. Thus, the claim limitation of "does not overlap" is not satisfied by Dang's stent because the tie member's legs have a part which extends into and is in common with the "serpentine" struts.

Anticipation requires that every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58

USPQ2d 1286, 1291 (Fed. Cir. 2001). In this case, we agree with Appellants that Dang does not anticipate claims 1 and 10 because it does not describe a stent, as claimed, in which each leg of an elongate connector “does not overlap longitudinally” with the serpentine bands; Dang’s connector legs overlap with the serpentine bands. Thus, we reverse the rejection of claims 1 and 10, and dependent claims 2, 4, 5, 11, 13, and 14.

The Examiner argues that Appellants give “to[o] much weight to the claim language” of “does not overlap longitudinally” (Answer 8). The scope of a claim is defined by the language used to describe the invention. The “weight” of each term recited in the claim is measured by properly determining “the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.” *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). The Examiner interprets the term “overlap” as we do – to mean “to cover a part of” (Answer 8). The “legs” of Dang’s tie member coincide with, and therefore necessarily, cover a part of the serpentine band. Thus, giving the claim interpretation its proper weight in defining the scope of the claim, we conclude that Dang does not meet the limitation excluding overlap between the legs and struts.

Claim 1 also requires that the serpentine bands are “consisting of a plurality of interconnect struts.” We do not find that this limitation alone distinguishes the stent of claim 1 from Dang’s stent. We interpreted “consisting of” to exclude any other structural member from the serpentine

band. In Dang, the only structures present in the W-shaped elements which form the serpentine band are the struts. The wishbone connector legs “overlap” with the struts. Thus, the connector’s leg is also a strut. In other words, the serpentine bands actually consist only of struts. In our opinion, the claim language does not exclude the serpentine struts from serving a dual function as the legs of the connector.

Obviousness over Dang in view of Dinh

Claims 8, 9, and 17 stand rejected under 35 U.S.C. § 103(a) as obvious over Dang in view of Dinh (Answer 7).

Obviousness requires a teaching that all elements of the claimed invention are found in the prior art and “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

We agree with Appellants that Dinh “does nothing to address the failure of Dang to teach or suggest all of the elements of the instant claims” (Br. 14). Thus, we reverse the rejection of claim 8, 9, and 17.

SUMMARY

Giving the claims their broadest reasonable interpretation, we conclude that the Examiner erred in determining Dang describes every element of the claimed invention as required for anticipation under 35 U.S.C. § 102(b). This deficiency is not correct by Dinh. Accordingly, the rejections of all the appealed claims are

REVERSED.

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